REMARKS

The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Claims 1-28 are pending in this case. Claim 26 has been rejected under 35 U.S.C. § 112, second paragraph. Claims 1-28 have been rejected under 35 U.S.C. § 103(a). Independent claims 1, 12, 23, 27-28 and dependent claims 3-5, 14-16, 19-21, 26 have been amended.

With respect to the Examiner's 35 U.S.C. § 103(a) rejections, Applicant has reviewed the cited art and respectfully submits that the art fails to disclose or suggest the Applicant's claimed invention. Therefore, Applicant respectfully traverses and requests favorable reconsideration.

Telephonic Interview

Applicant wishes to thank the Examiner for granting a telephonic interview on February 26, 2007. The interview participants included Primary Examiner Paul Kim and Howard Zaretsky (Applicant's representative).

Response to 35 U.S.C. § 112, Second Paragraph Rejections

The Examiner rejected claim 26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Amended claim 26 now features language which makes it clear what the subject matter is that the Applicant regards as the invention. Applicant believes that amended claim 26 overcomes the Examiner's rejection based on § 112, second paragraph grounds. The Examiner is respectfully requested to withdraw the § 112, second paragraph rejection.

Response to 35 U.S.C. § 103(a) Rejections

Claims 1-7, 9-10, 12-13, 15-18, 20-21, 23, 26-28:

The Examiner rejected claims 1-7, 9-10, 12-13, 15-18, 20-21, 23, 26-28 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0016718

("Rothschild") in view of U.S. Patent No. 6,574,629 ("Cooke"). Applicant respectfully submits that the prior art fails to disclose or suggest at least means for interrupting an automatic publishing mode and immediately switching to an interactive mode in response to a command received from a user before transmission of data for a study selected by said user is complete. Therefore, Applicant respectfully traverses the rejections and request favorable reconsideration.

While continuing to traverse the Examiner's rejections, Applicant, in order to expedite the prosecution, has chosen to clarify and emphasize the crucial distinctions between the present invention and the devices of the patents cited by the Examiner. Specifically, claim 1 has been amended to include a system for publishing images over a communication network, comprising a study storage device for storing a plurality of studies, each study comprising one or more images, a publication server coupled to said communications network, said publication server adapted to enter an automatic mode wherein one or more studies from among said plurality of studies are automatically sent to a client computer coupled to said communications network as they become available on said study storage device, said client computer adapted to receive said one or more studies and store them in a local cache, and said client computer comprising means for a user to enter an interactive mode whereby said automatic mode is **interrupted** and an interactive viewing session is initiated for **immediately** viewing one or more images of a selected study **regardless** of the percentage already received, wherein said one or more images of said selected study are displayed first using data already in said local cache, and second from data obtained from said publication server using progressive image streaming techniques in response to requests for one or more regions of interest (ROI) representing required study data not found in said local cache.

Rothschild teaches a medical image management system and method that uses a central data management system to centrally manage the storage and transmission of electronic records containing medical images between remotely located facilities. The invention also provides a system and method for packaging an image for secure transmission, for tracking delivery and review of images and various attachments or augmentations to the image files and for providing lifetime storage of images that may be accessed by different authorized imaging centers and providers throughout the life of the patient. An image or file

is packaged to be transmitted through a firewall of an image viewing location and stored in a relational database at the remote viewer. The image is delivered to a physician for ready accessibility at a remote viewer. Various files may be added to the patient's file at remote viewers. Overlays, reports and other attachments are created or input at image viewing stations and may packaged for delivery to authorized locations and are tracked and stored by a data center.

Cooke teaches a picture archiving and communication system (PACS) that includes plural core components arranged in a cluster. These core components include an archive station which includes long-term storage for storing image data, and a reviewing station which includes a display for displaying images based on received image data. Also included is a network gateway which interfaces to a non-core component so as to receive image data therefrom, and which routes the image data to at least one of the archive station and the reviewing station based on a set of rules in the network gateway. Finally, a database server manages access to the image data, and stores information relating to the image data.

It is submitted that the system of Rothschild is operative to send a **complete** image before the user can view it, as stated in paragraph [0104]: "The image file is received by the data center in a way that guarantees completion of the job before it is seen by processing logic." Further, Rothschild does not teach interrupting the current push or pull mode (i.e. automatic mode) of operation and immediately switching to an interactive mode regardless of the amount of data already sent (if any) to the client computer.

In contrast, the present invention permits an automatic mode to be **interrupted** and the contents to be viewed **before** transmission of the contents of the study is complete or before transmission **has even begun**. Transmission for non-selected studies still continues but a higher priority is given to requests for data of the selected study.

Once the interactive mode is entered, the user can then **interact** with the images in the study. In response to the user interacting with the image in the viewing session, one or more requests for **regions of interest (ROIs)** are generated and sent by the client computer to the publication server. The selected study is displayed, **first** using local cached study data (if any) and **second** using data received from the publication server using **progressive image streaming techniques**. The missing layers of accuracy for each region of interest (ROI) are

requested from the publication server by the client computer. In response, the publication server computer retrieves the requested data, encodes and transmits the corresponding data blocks to the client computer for subsequent display to the user. These features are neither taught nor suggested by the combination of the Rothschild and Cooke references.

Streaming only the data within ROIs enables **prioritized transmission** of the currently viewed region of the image. Each time the user manipulates the image (i.e. zoom, pan, window level/width, etc.) the client determines which regions of interest image data is needed for. The requested ROI data is then **streamed on the fly** from the publication server to the client viewer application. This is performed dynamically on each image yielding very high speed efficiency. As a result, the user has the freedom to view any portion of the image, at any magnification, almost instantaneously. This feature is neither taught nor suggested by the combination of the Rothschild and Cooke references.

The Examiner has asserted that Cooke discloses interrupting the automatic mode and initiating an interactive viewing session. It is submitted that the Cooke reference does not teach interrupting the automatic mode and initiating an interactive viewing session. rather, Cooke discloses simply providing a button in the PACS application that is operative to **halt a queue** and a second button to **restart a queue** (col. 30, lines 29-31). Halting and re-starting a queue is not substantially different from interrupting automatic mode and starting an interactive viewing session, with the subsequent streaming of regions of interest image data.

Applicant submits that the present invention does not simply start and stop a queue. In contrast, the present invention allows a user to halt the automatic transmission of a study and once halted to immediately enter into an **interactive mode**. It is in this interactive mode that a user can pan, zoom, perform window leveling, etc. an image within an image. In response to the interactive viewing, the client computer may require image data for regions of interest corresponding to the particular view the client is requesting. In response to the requests for particular ROIs, the client computer first looks in its local cache for data already transmitted from the publication server. If it finds the data, it uses the locally cached data. It may be that data transmission for the particular study hasn't even begun or that some data has been transmitted but it is not associated with the requested ROIs. Thus, if the client computer does not find the requested ROI data, it generates and sends one or more ROI requests to the

publication server. The requested data is received by the client computer and placed in the local cache. Neither the Rothschild nor Cooke references, either alone or in combination, teach halting the automatic download of a study and **immediately beginning** an interactive viewing session regardless of how much of the study was transferred (if any) whereby a user can view selected ROIs of an image **first searching locally cached data** and then **if not found** in the local cache, **requesting the ROIs from the publication server**.

The data is retrieved from the publication server using progressive image streaming techniques whereby entire images or sequence of images do not need to be transferred. Only the data necessary to satisfy the user's request and preference (i.e. zoom, pan, window level, etc.) are actually transmitted from the publication server to the client computer. In progressive image streaming, the most visually important information is sent first. This permits extremely fast convergence to high quality allowing users to recognize important features of the study and to begin working immediately. Streaming only the ROI data prioritizes the transmission of the currently viewed portion of the image. Neither of the Rothschild and Cooke references, either alone or in combination, teaches interactively viewing an image in an interactive mode at time before, during or after transmission of a study to the client computer. In fact, Cooke neither teaches nor suggests displaying the image after halting the queue.

To reject the claims as obvious under 35 U.S.C. §103(a) there must be some suggestion or motivation, either in the references themselves or in the prior art, to modify or combine teachings. Furthermore, the prior art references must teach all the claimed limitations. Application has reviewed the cited art and respectfully submits that the art fails to disclose or suggest the Applicant's claimed invention, and fails to teach each and every element and limitation of the claims rejected herein. Therefore Applicant respectfully traverses the rejections and requests favorable reconsideration.

For the reasons stated above, Applicant submits that independent claims 1, 12, 23, 27-28 and hence dependent claims 2-7, 9-10, 13, 15-18, 20-21 are not obvious in light of the combination of Rothschild and Cooke. The Applicant respectfully traverses the rejection of claims 1-7, 9-10, 12-13, 15-18, 20-21, 23, 26-28 and submits that the presently claimed

invention are patently distinct over Rothschild in view of Cooke. The Examiner is respectfully requested to withdraw the rejection based on 35 U.S.C. §103(a).

Claim 1:

The Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0016718 ("Rothschild") in view of Applicant's admitted prior art ("ADMITTED PRIOR ART"). Applicant respectfully submits that the prior art fails to disclose or suggest at least means for entering an interactive mode whereby the automatic mode is interrupted and an interactive viewing session is initiated for immediately viewing one or more regions of interest (ROIs) of a selected study, regardless of the portion if any of the selected study already transmitted, first using any image data already locally cached, and second sending interactive ROI requests for missing image data to the publication server whereby required study data not in the local cache is received from the publication server using progressive image streaming techniques. This feature is neither taught nor suggested by the Rothschild reference and ADMITTED PRIOR ART, either alone or in combination.

For the reasons stated above, Applicant submits that claim 1 is not obvious in light of the combination of Rothschild and ADMITTED PRIOR ART. The Applicant respectfully traverses the rejection of claim 1 and submits that the presently claimed invention is patently distinct over Rothschild in view of ADMITTED PRIOR ART. The Examiner is respectfully requested to withdraw the rejection based on 35 U.S.C. §103(a).

Claims 8, 11, 14, 19, 22, 24-25:

The Examiner rejected claims 8, 11, 14, 19, 22, 24-25 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2002/0016718 ("Rothschild et al.") in view of U.S. Patent No. 6,574,629 ("Cooke") and further in view of U.S. Patent Publication No. 2006/0031372 ("Krishnan").

Krishnan teaches a system and method for prioritized transmission of scalable compressed data are provided, the system including a database server for receiving an interactive prioritization request from a client and prioritizing transmission of the compressed data relative to a bin optimization in response to the interactive prioritization request. The

method includes receiving an interactive prioritization request from a client, prioritizing transmission of the compressed data relative to the bin optimization in response to the interactive prioritization request and transmitting the prioritized compressed data to the client.

In light of the arguments supra, it is believed that amended independent claims 1, 12, 23, 27-28 overcome the rejections based on 35 U.S.C. §103(a). Thus, it is believed that dependent claims 8, 11, 14, 19, 22, 24-25 overcome the rejections based on 35 U.S.C. §103(a) as well. Applicant respectfully submits that the prior art fails to disclose or suggest at least means for interrupting an automatic publishing mode and immediately switching to an interactive mode in response to a command received from a user before transmission of data for a study selected by said user is complete. Therefore, Applicant respectfully traverses the rejections and request favorable reconsideration.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that independent claims 1, 12, 23, 27-28 and hence dependent claims 2-11, 13-22, 24-26 are now in condition for allowance. Prompt notice of allowance is respectfully solicited.

In light of the Amendments and the arguments set forth above, Applicant earnestly believes that they are entitled to a letters patent, and respectively solicit the Examiner to expedite prosecution of this patent applications to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

Customer Number: 25937

Respectfully submitted,

ZARETSKY & ASSOCIATES PC

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By: 

Howard Zaretsky
Reg. No. 38,669
Attorney for Applicants

Zaretsky & Associates PC
8753 West Runion Dr
Peoria AZ 85382-6412
Tel.: 623-362-2585